AIR QUALITY PERMIT

Issued to: Luzenac America, Inc.
28769 Sappington Road
Three Forks, MT 59752

Permit: #1996-14
Administrative Amendment Request Received: 09/08/03
Department Decision on Administrative Amendment: 10/06/03
Permit Final: 10/22/03
AFS#: 031-0008

An air quality permit, with conditions, is hereby granted to Luzenac America – Sappington Mill (Luzenac) pursuant to Sections 75-2-204 and 211 of the Montana Code Annotated (MCA), as amended, and the Administrative Rules of Montana (ARM) 17.8.740, *et seq.*, as amended, for the following:

SECTION I: Permitted Facilities

A. Plant Location

The talc processing plant, including milling, refining, and packaging of talc products is located in Section 31, Township 1 North, Range 1 West, Gallatin County, Montana. A list of permitted equipment is included in the Permit Analysis.

B. Current Permit Action

On September 8, 2003, the Montana Department of Environmental Quality – Air and Waste Management Bureau (Department) received from the Luzenac America – Sappington Mill (Luzenac) a request for determination of project applicability under ARM 17.8.745. Specifically, the project involves the addition of a new processing circuit to accommodate the manufacturing of talc-based slurry products.

The proposed project would result in various changes to facility operations affecting actual and potential plant-wide emissions. These process changes include the following:

- Increased ore handling from approximately 146,000 tons per year (tpy) to approximately 180,000 tpy;
- An increase of approximately 23% in haul roads/trucks vehicle miles traveled per year;
- An increase of approximately 23% in indoor ore storage;
- An increase of approximately 23% in mobile source fuel consumption;
- An increase of approximately 23% in haul roads/loader vehicle miles traveled per year; and
- Installation and operation of a new feed bin and dust collector (2000 acfm).

As detailed in the letter received by the Department on September 8, 2003, total potential particulate matter (PM) emissions increases, associated with the above listed changes, are calculated at 11.30 tpy. Because potential increased PM emissions resulting from the proposed project are less than 15 tpy, the proposed project can be accomplished in accordance with ARM 17.8.745(1)(a).

In addition, Luzenac provided the Department with information regarding various inconsistencies between existing unit process rates contained in the permit analysis of Permit #1996-13 and actual process rates achieved at the facility. Further, annual process rates associated with three existing emitting units will increase as a result of the proposed project.

Because these process rates are associated with existing process baghouse operations and because all existing baghouses at the Luzenac facility have been analyzed at capacity operations (i.e. using the enforceable grain loading limit at maximum unit airflow capacity), these increases/inconsistencies do not result in any increase or decrease in potential emissions previously analyzed for facility operations.

Further, the new dust collector associated with the proposed project is affected equipment under 40 Code of Federal Regulation Part 60 (40 CFR 60), Subpart OOO. Therefore, the proposed equipment is subject to initial source testing requirements in accordance with Section II.B.2 of this permit.

A facility-wide emission inventory, including all changes under the current permit action, is contained in Section IV of the permit analysis.

SECTION II: Conditions and Limitations

A. Emission Control Requirements

1. Stack emissions are limited to 0.05 grains per dry standard cubic meter (g/dscm) (0.02 grains per dry standard foot (gr/dscf)) of particulate and 7% opacity (ARM 17.8.752, ARM 17.8.340 and 40 CFR Part 60, Subpart OOO). This includes emissions from each crusher, grinding mill, screening operation, bucket elevator, belt conveyor, bagging operation, storage and feed bin, enclosed truck and railcar loading station constructed after August 31, 1983, and emissions from the following equipment including, but not limited to:

Equipment Name	**Identification #**
Crude Ore Feed System	DC#1A
Impactor and Conveyor	DC#2
Coarse Ore Bin #1	DC#3
Coarse Ore Bin #2	DC#4
Pelletizer Feed Bin	DC#5B
ACM Mill #1	DC#6
ACM Mill #2	DC#7
Fine Product Silo #3	DC#8
Fine Product Silo #4	DC#9
Pelletizer Dryer Dust Collector	DC#10
Storage Silo #1	DC#11A
Densifier Feed Bin	DC#14A
Durant Packer Bin	DC#15
Coarse Ore Bin #3	DC#16
ACM Mill #3	DC#17
Fine Product Silo #5	DC#18
Fine Product Silo #6	DC#19
Packaging Area General Ventilation: Durant Packer, Densifiers, Reclaim	DC#21
Vacuum System & ACM Mill Purge	DC#22A
Packaging Area Target Box	DC#23
Classifier Cyclone	DC#24
Classifier System (Proposed)	DC#24A
ACM Mill #4	DC#25
Coarse Ore Bin #4	DC#26
Fine Product Silo #2	DC#30
Slurry Feed Bin	DC#31

2. Fugitive emissions are limited to 10% opacity (ARM 17.8.340 and ARM 17.8.752). This includes, but is not limited to, the following sources of fugitive emissions:

    a. Haul Roads
    b. Ore Storage Building
    c. Ore Handling
    d. Fines Stockpile
    e. Ore Storage - Outdoor
    f. Topsoil Stockpiles
    g. Access Roads or General Plant Property
    h. Crude Ore Feed System

3. Luzenac shall treat all unpaved portions of the access roads, parking lots, and general plant area with water, chemical dust suppressant, and/or paving as necessary to maintain compliance with the 10% opacity limitation (ARM 17.8.749).

4. Luzenac shall operate their control equipment to provide the maximum air pollution control for which it was designed (ARM 17.8.752).

5. The Crude Ore Feed System shall consist of a 20-cubic-yard side-loaded hopper, a three-sided enclosure, a pan vibrator feeder, and a covered conveyor (ARM 17.8.752).

6. Stack emissions from the #2 Pellet Dryer are limited to 0.057 grams per dry standard cubic meter (g/dscm) of particulate and 10% opacity (ARM 17.8.340 and 40 CFR Part 60, Subpart UUU).

7. Luzenac shall comply with all applicable standards and limitations, and the reporting, record-keeping, and notification requirements contained in 40 CFR Part 60, Subpart OOO, and Subpart UUU for the plant (ARM 17.8.340 and 40 CFR 60).

B. Testing Requirements

1. All compliance source tests shall conform to the requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

2. All affected equipment, as defined in 40 CFR 60, Subpart OOO, shall be tested and compliance demonstrated with the emission limitations contained in Section II.A.1 within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start up, unless otherwise approved in writing by the Department (ARM 17.8.752, and 40 CFR 60.8). After the initial compliance source test, testing shall be performed as required by the Department or according to another testing/monitoring schedule as may be approved by the Department (ARM 17.8.105).

3. The material transfer point between the portable feeder and conveyor used for railcar talc ore unloading operations at both the Luzenac – Sappington and Luzenac – Three Forks Mills shall be tested and compliance demonstrated with the opacity emission limitations contained in Section II.A.2 within 60 days after achieving the maximum production rate at which the affected facility will be operated, but not later than 180 days after initial start up of the system (ARM 17.8.752, and 40 CFR 60.8). After the initial source test, testing on the new portable feeder and conveyor shall be performed as required by the Department or according to another testing/monitoring schedule as may be approved by the Department.

Initial source testing is not required after initial start-up at both the Luzenac Sappington and Three Forks Mills, only within 60 days after maximum production is achieved but not later than 180 days after initial start up of the system at either facility (ARM 17.8.105).

4. Process rates during testing must be at specific conditions that are representative of maximum operating capacity or maximum permitted capacity, unless otherwise agreed upon by the Department and the source (ARM 17.8.106).

5. The tests shall be performed according to EPA methods, as specified in 40 CFR Part 60, Appendix A (ARM 17.8.106).

6. The Department may require further testing (ARM 17.8.105).

C. Operational and Emission Inventory Reporting Requirements

1. Luzenac shall supply the Department with annual production information for all emission points, as required by the Department in the annual emission inventory request. The request will include, but is not limited to, all sources of emissions identified in the emission inventory contained in the permit analysis.

   Production information shall be gathered on a calendar-year basis and submitted to the Department by the date required in the emission inventory request. Information shall be in the units required by the Department. This information may be used for calculating operating fees, based on actual emissions from the facility, and/or to verify compliance with permit limitations (ARM 17.8.505).

2. Luzenac shall notify the Department of any construction or improvement project conducted pursuant to ARM 17.8.745, that would include a change in control equipment, stack height, stack diameter, stack flow, stack gas temperature, source location or fuel specifications, or would result in an increase in source capacity above its permitted operation or the addition of a new emission unit.

   The notice must be submitted to the Department, in writing, 10 days prior to start up or use of the proposed de minimis change, or as soon as reasonably practicable in the event of an unanticipated circumstance causing the de minimis change, and must include the information requested in ARM 17.8.745(1)(d) (ARM 17.8.745).

3. All records compiled in accordance with this permit must be maintained by Luzenac as a permanent business record for at least 5 years following the date of the measurement, must be available at the plant site for inspection by the Department, and must be submitted to the Department upon request (ARM 17.8.749).

D. Notification

Luzenac shall provide the Department with written notification of the following dates within the specified time periods:

1. Commencement of construction of the portable feeder/conveyor used to transfer talc ore from railcars (ARM 17.8.340).

2. Actual start-up date of the portable feeder/conveyor used to transfer talc ore from railcars (ARM 17.8.340).

3. Commencement of construction of the new classifier system – DC#24A (ARM 17.8.340).

4. Actual start-up date of the new classifier system – DC#24A (ARM 17.8.340).

5. Commencement of construction of the new pelletizer feed bin – DC#5B (ARM 17.8.340).

6. Actual start-up date of the new pelletizer feed bin – DC#5B (ARM 17.8.340).

7. Luzenac shall comply with the notification requirements of the Montana Source Test Protocol and Procedures Manual (ARM 17.8.106).

SECTION III: General Conditions

A. Inspection – Luzenac shall allow the Department's representatives access to the source at all reasonable times for the purpose of making inspections or surveys, collecting samples, obtaining data, auditing any monitoring equipment (CEMS, CERMS) or observing any monitoring or testing, and otherwise conducting all necessary functions related to this permit.

B. Waiver – The permit and the terms, conditions, and matters stated herein shall be deemed accepted if Luzenac fails to appeal as indicated below.

C. Compliance with Statutes and Regulations – Nothing in this permit shall be construed as relieving Luzenac of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*. (ARM 17.8.756).

D. Enforcement – Violations of limitations, conditions and requirements contained herein may constitute grounds for permit revocation, penalties or other enforcement action as specified in Section 75-2-401, *et seq*., MCA.

E. Appeals – Any person or persons jointly or severally adversely affected by the Department's decision may request, within 15 days after the Department renders its decision, upon affidavit setting forth the grounds therefore, a hearing before the Board of Environmental Review (Board). A hearing shall be held under the provisions of the Montana Administrative Procedures Act. The Department's decision on the application is not final unless 15 days have elapsed and there is no request for a hearing under this section. The filing of a request for a hearing postpones the effective date of the Department's decision until conclusion of the hearing and issuance of a final decision by the Board.

F. Permit Inspection – As required by ARM 17.8.755, Inspection of Permit, a copy the air quality permit shall be made available for inspection by the Department at the location of the source.

G. Permit Fee – Pursuant to Section 75-2-220, MCA, as amended by the 1991 Legislature, failure to pay the annual operation fee by Luzenac may be grounds for revocation of this permit, as required by that section and rules adopted thereunder by the Board.

H. Construction Commencement – Construction must begin within 3 years of permit issuance and proceed with due diligence until the project is complete or the permit shall be revoked (ARM 17.8.762).

PERMIT ANALYSIS
Luzenac America, Inc.
Permit #1996-14

I. Introduction/Process Description

A. Site Location/Source Description

The Luzenac America – Sappington Mill (Luzenac) talc processing plant, including milling, refining, and packaging of talc, is located in Section 31, Township 1 North, Range 1 West, Gallatin County, Montana.

B. Permitted Equipment

Source Name	Year of Installation	NSPS	AFS Point #	Control Equipment
Haul Roads	1986	N/A	001	Water/Chemical/Paving
Ore Storage Building	1986	N/A	002	Partial Enclosure
Ore Handling	1986	N/A	003	None
ACM #1 Product Collector	1986	OOO	008	Fabric Filter (DC #6)
ACM #2 Product Collector	1986	OOO	009	Fabric Filter (DC #7)
Pellet Dryer	1986	OOO*	010	Fabric Filter (DC #10)
Pelletizer	1986	OOO*	010	Fabric Filter (DC #10)
Diesel Exhaust	1986	N/A	016	None
Fine Product Silo #3	1986	OOO	017	Fabric Filter (DC #8)
Fine Product Silo #4	1986	OOO	018	Fabric Filter (DC #9)
Durant Packer Bin	1986	OOO	020	Fabric Filter (DC #15)
Coarse Ore Feed Bin #1	1986	OOO	021	Fabric Filter (DC #3)
Coarse Ore Feed Bin #2	1986	OOO	022	Fabric Filter (DC #4)
Pelletizer Feed Bin	2002	OOO	023	Fabric Filter (DC #5B)
Impactor, Impactor Conveyor, and Local Exhaust	1986	OOO	024	Fabric Filter (DC #2)
Fine Product Silo #6	1986	OOO	025	Fabric Filter (DC #19)
ACM #3 Product Collector	1988	OOO	026	Fabric Filter (DC #17)
Coarse Ore Bin #3	1988	OOO	027	Fabric Filter (DC #16)
Fine Product Silo #5	1988	OOO	030	Fabric Filter (DC #18)
Packaging Area Target Box	1988	N/A**	031	Fabric Filter (DC #23)
Vacuum System and ACM Mill Purge	1994	OOO	032	Fabric Filter (DC #22A)
Classifier Cyclone	1986	OOO	033	Fabric Filter (DC #24)
Vacuum System Pre-Separator (No Discharge)	1995	N/A		Fabric Filter (DC #27)
Densifier Feed Bin	1995	OOO	011	Fabric Filter (DC #14A)
Packaging Area General Ventilation – Durant Packer, Densifiers, Reclaim.	1995	OOO	012	Fabric Filter (DC #21)
Storage Silo #1	1996	OOO	019	Fabric Filter (DC #11A)
ACM #4 Product Collector	1997	OOO	036	Fabric Filter (DC #25)
Coarse Ore Bin #4	1997	OOO	037	Fabric Filter (DC #26)
Fine Product Silo #2	1999	OOO	041	Fabric Filter (DC #30)
Classifier System	2002	OOO		DC#24A
Portable Feeder/Conveyor (railcar load-out)	2002	OOO		Vacuum/Water
Talc-Based Slurry Circuit	2003	OOO		DC#31

* 40 CFR Part 60, Subpart OOO does not apply to the #1 pellet dryer or the #1 pelletizer. The fabric filter controlling emissions from these sources, however, ventilates a packaging operation also. Based on this information, 40 CFR Part 60, Subpart OOO applies to the stack emissions.

** This equipment is control equipment that ventilates NSPS affected sources. The control equipment itself is not considered to be NSPS, but the emission rates are limited to NSPS limits.

C. Permit History

Permit #1996 was issued on March 29, 1985, to Montana Talc Company for the construction and operation of a new talc mill to be located at Sappington Station, 14 miles southwest of Three Forks. The application was deemed complete as of January 28, 1985.

The operation involved the milling, refining, and packaging of talc. The ore is hauled to the site by truck. The talc is processed through a variety of dry crushing and sorting operations into various talc products. The permit covered process equipment and fifteen fabric filters, which controlled emissions.

The permit was issued prior to the promulgation of 40 Code of Federal Regulations Part 60 (40 CFR 60), Subpart OOO, which occurred August 1, 1985. The emission limitations contained in the permit were the same as those promulgated in Subpart OOO, which apply to all sources constructed, reconstructed, or modified after August 31, 1983. The permit required Montana Talc Company (Montana Talc) to test two of the fifteen baghouses. Montana Talc Company tested the ACM Mill #1 and the pellet dryer baghouses, and demonstrated compliance with the permit conditions. The permit also required Montana Talc Company to analyze the asbestos content of the ore. Montana Talc Company supplied a detailed analysis.

Permit #1996-01 was issued to Montana Talc on July 13, 1994. The permit was an alteration allowing Montana Talc to construct and operate a Peabody TekTank storage silo and a Mikro-Pulsaire fabric filter to control emissions. The vent associated with the filter would have airflow of approximately 900 ACFM.

The silo stored ground talc. The bin vent (fabric filter) served to separate the talc product from the air stream used to pneumatically convey the material. From Product Silo #6, the talc was conveyed to either the packaging plant or the pelletizer. Product Silo #6 gave Montana Talc more flexibility in handling their product and increasing productivity. The new silo allowed Montana Talc to store more product, which, in turn, allowed for longer runs on specific grinds.

Montana Talc also modified the existing vacuum system (installed in 1986, but not permitted) and changed the purpose of the system. The system consisted of a bin (130 cubic feet) and baghouse (600-CFM Mikro-Pulsaire, Model 12-8-2200). The material gathered from the bin was dumped into a truck and landfilled on site. Under the proposed changes, the material would have still been gathered in the bin, but would no longer have been considered waste. A target box with a magnet and a tray screen would be installed to capture trash, which was entrained in the air stream. Instead of dumping the material, it would be returned to the ACM mills for reprocessing. The bin would become a storage bin for material being returned to the process. This change would eliminate the fugitive emissions associated with loading and dumping the truck and the need to landfill waste material, which still contained product.

As part of the permitting process, the Department of Environmental Quality (Department) identified the specific equipment covered by Permit #1996 and identified which equipment is subject to the New Source Performance Standards. There was some difficulty in determining the equipment since the only flow diagrams available in the Department's files were preliminary drawings. The company did not have a current set of flow diagrams. As part of the review, it was determined that the sources identified in Permit #1996-01 were covered in the original permit. A number of other changes had occurred at the plant since the original permit was issued. Montana Talc had several additional pieces of process and control equipment, which were in operation at the facility but not permitted.

Permit #1996-02 was issued August 26, 1994. This alteration permitted the equipment identified as constructed since 1986 and not previously permitted. This equipment was as follows:

- ACM #3 (DC #17),
- Fine Ore Bin 33 (DC #16),
- Fine Product Silo #5 (DC #18),
- Bin Vent Dust Collector (DC #20),
- Packaging Area Local Exhaust Dust Collector (DC #21), and
- Packaging Area Target Box Dust Collector (DC #23).

The permit application and issuance of an alteration also allowed Montana Talc to come into procedural compliance with state permitting requirements. The addition of the ACM #3, coarse ore bin #3, and fine product silo #5 allowed Montana Talc to expand the capacity of the mill.

The addition of the bag break packaging ventilation and packaging target box vent provided additional controls to existing processes and added a new method of handling broken or non-specification bags. These systems also decreased worker exposure to some fugitive indoor emissions. The bag break packaging system included the installation of a bag break station and a pneumatic conveying system for transporting the talc from the rejected bags.

Permit #1996-03 was issued on November 4, 1994, and allowed Montana Talc to modify the Vacuum System (DC #22) by replacing the existing baghouse with a larger baghouse identified as DC #22A. This change was needed since the design implemented in July 1994 was not able to provide enough ventilation to perform the required activities.

This alteration also permitted the changing of the feed system to the plant. The Stamler crusher, previously used to control the feed to the plant, was replaced with a hopper and conveyor system. The facility no longer crushed crude ore at the plant. They fed the ore as received from the mine. This change allowed for a more efficient flow of materials. The company planned to decrease the stockpiled crude ore currently stored at the plant.

The last part of the alteration was to permit the JS 30 and classifier fine cut cyclone (DC #24). This equipment was installed in 1986, but was not permitted at that time.

Permit #1996-04 was issued March 21, 1995, and allowed Montana Talc to install a semi-bulk powder densification system and associated control equipment (DC #14A) and to upgrade the pelletizer feed bin fans (DC #5A and 20A).

A modification included in this permit action also allowed the installation of a pre-separator dust collection and containment system. This system would function as an in-line filter upstream of the DC #22A. There would be no vent to atmosphere and the result would be a decreased inlet loading to DC #22A. This is identified in the equipment list as the vacuum system pre-separator (DC #27). Montana Talc also requested removal or discontinuation of service of equipment and associated control equipment from the packaging area, including a Bemis packer #1 (40-95), rail loadout (40-91), fabric filter (DC #12), truck loadout (40-92), fabric filter (DC #13), compacted talc silo (40-86), and fabric filter (DC #11).

Permit #1996-05 was an alteration issued on June 23, 1995. This permit allowed Montana Talc to install a heat treatment system and related control equipment (DC #11A, 25, and 26), modify the Durant dust collection system to include DC #21A, and reconfigure part of the crude ore handling dust collection system (DC #1A). Reconfiguring part of the crude ore handling dust collection system was related to removal of some of the crushing area equipment, including the primary and secondary screens and related conveyors.

The application also described construction of a covered crude ore storage facility, paving of all major traffic areas around the plant, and purchase of a commercial sweeper to clean these areas. The permit was also updated to reflect compliance demonstrations and notifications, which had been completed.

Permit #1996-06 was issued on April 24, 1996. The permit covered numerous projects, including the storage silo conversion, pelletizer drying circuit upgrade, feeder crusher revision, ACM #4 installation, pelletizer circuit expansion, ACM #1 bin vent dust collector, and the heat treat system. The storage silo conversion consisted of converting an existing compact talc storage silo to handle powdered talc; this involved re-permitting of DC #11A as a bin vent collector. The pelletizer drying circuit Upgrade added approximately 1.0 MMBtu per hour to the existing circuit, but did not result in an increase in production. The feeder crusher revision replaced the crude feed system with a new feed system and reduction equipment. A new ACM mill circuit (identical to the three in place) was the ACM #4 installation; this project increased grinding capacity of the plant by 30,000 tons per year. Pelletizer circuit expansion included installation of a second pellet mill and a new vibrating fluid bed dryer rated at 11.2 MMBtu per hour. This expansion increased the capability to produce pelletized talc production from 70,000 to 100,000 tons annually. The ACM #1 bin vent dust collector replaced the existing collector. The heat treat system was removed from the permit because it had not been installed.

Permit #1996-07 was a modification issued on December 7, 1997. The purpose of the modification was to change the permit holder's name from Montana Talc Company to Luzenac America, Inc. The Montana Talc Company was purchased by Luzenac America, Inc. in 1994; however, the Montana Talc Company remained a corporate entity and air quality permits were issued to Montana Talc. The corporate entity of Montana Talc Company was dissolved by Luzenac America, Inc. Consequently, to update the permit, a permit modification was required so the permit was issued to the correct corporation.

In addition, the list of existing permitted equipment (Section I.A in Permit #1996-06) was removed from the permit and moved to the Permit Analysis. The permit was also updated to reflect completed compliance demonstrations and notifications. Rule reference citations were updated to reflect the recent recodification of the rules.

Permit #1996-08 was a modification issued on January 2, 1999. This permitting action revised the testing schedule. Testing requirements for some equipment were removed because the sources vented inside a building. In addition, silo numbers were updated. Railcar unloading of talc ore with a portable electric-powered conveyor was added to the permitted equipment. This activity did not require a permit because it met the exclusion under Administrative Rules of Montana (ARM) 17.8.705(1)(q). Permit #1996-08 replaced Permit #1996-07.

Permit #1996-09 was a modification issued on August 29, 1999. On July 21, 1999, the Department received a request from Luzenac to remove testing requirements for the following equipment: Product silo #6; silo #1; the pelletizer feed bin; the fine product silo #5; the packaging target box vent; and ACM #3. Because the units were all considered process equipment, all had very low emissions, and had successfully demonstrated compliance in the past, the Department agreed to remove the testing for these units.

On November 16, 1999, the Department received a letter from Luzenac requesting a de minimis determination and permit modification pertaining to the addition of a new feed bin (DC29) for the existing Raymond JS-30 classifier and installation of a new ground product storage silo (DC30). The Department determined that the proposed changes would not result

in increased potential emissions greater than 15 ton/yr. Therefore, the proposed permit changes fell under de minimis thresholds and the permit action was considered a permit modification. Further, the equipment list found in Section II.A.1 was updated to properly identify sources of emissions subject to 40 CFR Part 60, Subpart OOO. Permit **#1996-10** replaced Permit #1996-09.

On March 23, 2000, the Department received a letter from Luzenac requesting a de minimis determination and permit modification pertaining to the addition of two new fans on the existing fabric filters (product collectors) for Fine Product Silo #3 (DC8) and Fine Product Silo #4 (DC9). The proposed action would increase the airflow capacity on each product collector from 700 scfm to 900 scfm. The Department determined that the proposed changes would not result in an increase in potential emissions greater than 15 ton/yr. Therefore, the proposed permit changes fell under the de minimis threshold (ARM 17.8.705(1)(r)) and this permit action was a permit modification. Calculations demonstrating compliance with the de minimis rule were placed in the permit analysis.

In addition, because of the relatively small increase in airflow and the fact that Luzenac had demonstrated compliance by testing these units prior to this permitting action, Luzenac requested that the Department waive any applicable NSPS source testing requirements. At the time of permit issuance, the Department was unable to waive source-testing requirements pending EPA approval. In a letter dated March 6, 2000, the Department requested a formal determination from EPA regarding this issue. In the letter to EPA, the Department requested administrative authority and included that if the Department did not receive a written determination from EPA by June 1, 2000, it would be assumed that EPA agrees with the source testing waiver and has given the state of Montana administrative authority to formally waive initial source testing for NSPS affected sources similar to those described above. The Department did not receive a response from EPA and thus assumed administrative authority and waived NSPS testing for these sources. Permit **#1996-11** replaced Permit #1996-10.

On May 5, 2000, the Department received a letter from Luzenac requesting a de minimis rule determination regarding the replacement of two existing bin vent collectors (DC-8 and DC-9) with two new larger capacity (2000 acfm each) and more easily maintained collectors. The Department determined that the proposed changes would not result in an increase in potential emissions greater than 15 ton/yr. Therefore, the proposed permit changes fell below the de minimis threshold of 15 ton/yr (ARM 17.8.705(1)(r)) and the permit action was accomplished through a permit modification. Calculations demonstrating that potential emissions from the proposed project were less than the de minimis threshold are contained in the permit analysis of Permit #1996-12.

In addition, Luzenac requested that the Department waive any applicable initial NSPS source testing requirements. As described in Section I.C of the permit analysis for Permit #1996-12, the Department assumed administrative authority regarding this issue and waived initial NSPS source testing for the permit action. Permit **#1996-12** replaced Permit #1996-11.

On November 8, 2002, the Department issued final permit **#1996-13**. The permit action reflected recent equipment changes at the Luzenac facility. Because potential emissions from all proposed equipment changes/additions were less than 15 tons per year, the changes were accomplished in accordance with the ARM 17.8.705(1)(r) (de minimis rule). The proposed de minimis changes and the date of Department notification are listed below.

- Portable railcar talc ore feeder/conveyor (June 7, 2002).
- Pelletizer upgrade (removal of DC#5A and DC#20A and installation of DC#5B) (July 1, 2002).
- Classifier upgrade (Closed air circuit to an open/semi-open air circuit) (July 1, 2002).

A June 7, 2002, submittal from Luzenac indicated that railcar unloading operations such as that proposed are not subject to the requirements of 40 CFR 60, Subpart OOO (NSPS). The Department disagreed with this determination, in part. In accordance with 40 CFR 60, Subpart OOO, the material transfer points between the railcar and the portable feeder and the portable conveyor and the talc ore stock pile are not subject to NSPS requirements. However, the Department determined that the material transfer point between the portable feeder and conveyor is subject to NSPS requirements, as applicable.

Luzenac also requested that the Department waive initial source testing for the proposed pelletizer and classifier upgrades at the facility. Based on previous correspondence with the United States Environmental Protection Agency (EPA), Region VIII, the Department has administrative authority to waive initial source testing requirements based on consistent past similar source demonstration of compliance with applicable limits. Luzenac submitted correspondence demonstrating, to the Department's satisfaction, consistent compliance with source testing for equipment similar to the proposed NSPS affected source (DC#5B). Therefore, the Department waived initial source testing for this unit. However, because the proposed classifier upgrade involved a change in the type of operation from a closed circuit system to an open or semi-open system, the Department required an initial source test in accordance with NSPS requirements. Further, prior to initiation of the classifier upgrade, Luzenac proposed a test run of a semi-open system simulating the proposed change. The test run was limited to a total of 50 hours and was required to utilize an existing dust collector (DC#2).

In addition, on September 23, 2002, the Department received a request for modification of Permit #1996-12 to change the existing testing schedule for NSPS affected sources from an every-4-year test schedule to an every-5-year test schedule. In accordance with the Department's "Revised Testing Schedule" guidance (December 4, 1998), after the required initial compliance source test, NSPS affected sources with the potential to emit less than 50 tons per year shall be tested, "as required by the Department".

Because numerous baghouses and bin vents at the Luzenac facility are considered process equipment rather than control equipment, calculation and determination of the potential to emit from these sources is based on the grain loading control factor of the process baghouse or bin vent associated with the NSPS affected source. Using the grain loading control factor of 0.02 grains per dry standard cubic foot (NSPS Limit) resulted in a calculated potential to emit of less than 50 tons per year for each NSPS affected process baghouse and/or bin vent at the Luzenac facility. Therefore, in accordance with the Department's "Revised Testing Schedule" the permit action modified Luzenac's testing schedule for affected sources from required testing on an every-4-year schedule to testing "as required by the Department" for all affected units. The affected units remained subject to initial source testing requirements, unless otherwise noted. Permit #1996-13 replaced Permit #1996-12.

D. Current Permit Action

On September 8, 2003, the Montana Department of Environmental Quality – Air and Waste Management Bureau (Department) received from the Luzenac a request for determination of project applicability under the Administrative Rules of Montana (ARM) 17.8.745. Specifically, the project involves the addition of a new processing circuit to accommodate the manufacturing of talc-based slurry products.

The proposed project would result in various changes to facility operations affecting actual and potential plant-wide emissions. These process changes include the following:

- Increased ore handling from approximately 146,000 tons per year (tpy) to approximately 180,000 tpy;
- An increase of approximately 23% in haul roads/trucks vehicle miles traveled per year;
- An increase of approximately 23% in indoor ore storage;
- An increase of approximately 23% in mobile source fuel consumption;
- An increase of approximately 23% in haul roads/loader vehicle miles traveled per year; and
- Installation and operation of a new feed bin and dust collector (2000 acfm).

As detailed in the letter received by the Department on September 8, 2003, total potential particulate matter (PM) emissions increases, associated with the above listed changes, are calculated at 11.30 tpy. Because potential increased PM emissions resulting from the proposed project are less than 15 tpy, the proposed project can be accomplished in accordance with ARM 17.8.745(1)(a).

In addition, Luzenac provided the Department with information regarding various inconsistencies between existing unit process rates contained in the permit analysis of Permit #1996-13 and actual process rates achieved at the facility. Further, annual process rates associated with three existing emitting units will increase as a result of the proposed project. Because these process rates are associated with existing process baghouse operations and because all existing baghouses at the Luzenac facility have been analyzed at capacity operations (i.e. using the enforceable grain loading limit at maximum unit airflow capacity), these increases/inconsistencies do not result in any increase or decrease in potential emissions previously analyzed for facility operations.

Further, the new dust collector associated with the proposed project is affected equipment under 40 CFR 60, Subpart OOO. Therefore, the proposed equipment is subject to initial source testing requirements in accordance with Section II.B.2 of the permit.

A facility-wide emission inventory, including all changes under the current permit action, is contained in Section IV of the permit analysis. Permit **#1996-14** replaces Permit #1996-13.

E. Additional Information

Additional information, such as applicable rules and regulations, Best Available Control Technologies (BACT) determinations, air quality impacts, and environmental assessments, is included in the analysis associated with each change to the permit.

II. Applicable Rules and Regulations

The following are partial explanations of some applicable rules and regulations that apply to the facility. The complete rules are stated in the ARMs and are available, upon request, from the Department. Upon request, the Department will provide references for the location of complete copies of all applicable rules and regulations, or copies where appropriate.

A. ARM 17.8, Subchapter 1, General Provisions, including, but not limited to:

1. ARM 17.8.101 Definitions. This rule includes a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.105 Testing Requirements. Any person or persons responsible for the emission of any air contaminant into the outdoor atmosphere shall, upon written request of the Department, provide the facilities and necessary equipment, including instruments and sensing devices, and shall conduct tests, emission or ambient, for such periods of time as may be necessary using methods approved by the Department.

3. ARM 17.8.106 Source Testing Protocol. The requirements of this rule apply to any emission source testing conducted by the Department, any source or other entity as required by any rule in this chapter, or any permit or order issued pursuant to this chapter, or the provisions of the Clean Air Act of Montana, 75-2-101, *et seq.*, Montana Code Annotated (MCA).

   Luzenac shall comply with the requirements contained in the Montana Source Test Protocol and Procedures Manual, including, but not limited to, using the proper test methods and supplying the required reports. A copy of the Montana Source Test Protocol and Procedures Manual is available from the Department upon request.

4. ARM 17.8.110 Malfunctions. (2) The Department must be notified promptly, by telephone, whenever a malfunction occurs that can be expected to create emissions in excess of any applicable emission limitation, or to continue for a period greater than 4 hours.

5. ARM 17.8.111 Circumvention. (1) No person shall cause or permit the installation or use of any device or any means which, without resulting in reduction in the total amount of air contaminant emitted, conceals or dilutes an emission of air contaminant which would otherwise violate an air pollution control regulation. (2) No equipment that may produce emissions shall be operated or maintained in such a manner that a public nuisance is created.

B. ARM 17.8, Subchapter 2, Ambient Air Quality, including, but not limited to:

1. ARM 17.8.204 Ambient Air Monitoring
2. ARM 17.8.210 Ambient Air Quality Standards for Sulfur Dioxide
3. ARM 17.8.211 Ambient Air Quality Standards for Nitrogen Dioxide
4. ARM 17.8.212 Ambient Air Quality Standards for Carbon Monoxide
5. ARM 17.8.220 Ambient Air Quality Standard for Settled Particulate Matter
6. ARM 17.8.221 Ambient Air Quality Standard for Visibility
7. ARM 17.8.222 Ambient Air Quality Standard for Lead
8. ARM 17.8.223 Ambient Air Quality Standard for PM_{10}

Luzenac shall maintain compliance with the applicable ambient air quality standards.

C. ARM 17.8, Subchapter 3, Emission Standards, including, but not limited to:

1. ARM 17.8.304 Visible Air Contaminants. This rule requires that no person may cause or authorize emissions to be discharged into an outdoor atmosphere from any source installed after November 23, 1968, that exhibit an opacity of 20% or greater averaged over 6 consecutive minutes.

2. ARM 17.8.308 Particulate Matter, Airborne. (1) This rule requires an opacity limitation of less than 20% for all fugitive emission sources and that reasonable precautions be taken to control emissions of airborne particulate.

3. ARM 17.8.309 Particulate Matter, Fuel Burning Equipment. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter caused by the combustion of fuel in excess of the amount determined by this section.

4. ARM 17.8.310 Particulate Matter, Industrial Process. This rule requires that no person shall cause, allow, or permit to be discharged into the atmosphere particulate matter in excess of the amount set forth in this section.

5. ARM 17.8.322 Sulfur Oxide Emissions--Sulfur in Fuel. This rule requires that no person shall burn liquid, solid, or gaseous fuel in excess of the amount set forth in this section.

6. ARM 17.8.324(3) Hydrocarbon Emissions--Petroleum Products. No person shall load or permit the loading of gasoline into any stationary tank with a capacity of 250 gallons or more from any tank truck or trailer, except through a permanent submerged fill pipe, unless such a tank is equipped with a vapor loss control device as described in (1) of this rule.

7. ARM 17.8.340 Standard of Performance for New Stationary Sources. This rule incorporates, by reference, 40 CFR Part 60, Standards of Performance for New Stationary Sources (NSPS). The following subparts apply.

   Subpart OOO – Nonmetallic Mineral Processing Plants, requires opacity limitations of 10% on process fugitive emissions and 7% on stack emissions and a stack emission limitation of 0.05 grams per dry standard cubic meter (g/dscm). All process operations at this facility are affected facilities, with the exception of the #1 pelletizer and #1 pellet dryer.

   Subpart UUU – Calciners and Dryers in the Mineral Industries, applies to the #2 pellet dryer and requires a stack emission limitation of 0.057 grams per dry standard cubic meter (g/dscm) and an opacity limitation of 10%.

D. ARM 17.8, Subchapter 5, Air Quality Permit Application, Operation and Open Burning Fees, including, but not limited to:

1. ARM 17.8.504 Air Quality Permit Application Fees. This rule requires that an applicant submit an air quality permit application fee concurrent with the submittal of an air quality permit application. A permit application is incomplete until the proper application fee is paid to the Department. Because the proposed permit change does not result in an increase in potential emissions greater than 15 ton/yr, the current permit action does not require submittal of an application or application fee.

2. ARM 17.8.505 Air Quality Operation Fees. An annual air quality operation fee must, as a condition of continued operation, be submitted to the Department by each source of air contaminants holding an air quality permit, excluding an open burning permit, issued by the Department. The air quality operation fee is based on the actual or estimated actual amount of air pollutants emitted during the previous calendar year.

   An air quality operation fee is separate and distinct from an air quality permit application fee. The annual assessment and collection of the air quality operation fee, described above, shall take place on a calendar-year basis. The Department may insert into any final permit issued after the effective date of these rules, such conditions as may be necessary to require the payment of an air quality operation fee on a calendar-year basis, including provisions which pro-rate the required fee amount.

E. ARM 17.8, Subchapter 7, Permit, Construction and Operation of Air Contaminant Sources, including, but not limited to:

1. ARM 17.8.740 Definitions. This rule is a list of applicable definitions used in this chapter, unless indicated otherwise in a specific subchapter.

2. ARM 17.8.743 Montana Air Quality Permits--When Required. This rule requires a person to obtain an air quality permit or permit modification to construct, modify, or use any air contaminant sources that have the Potential to Emit (PTE) greater than 25 tons per year of any pollutant. Luzenac has the potential to emit more than 25 tons per year of total particulate matter (PM) and particulate matter with an aerodynamic diameter less than 10 microns (μm) (PM_{10}); therefore, an air quality permit is required.

3. ARM 17.8.744 Montana Air Quality Permits--General Exclusions. This rule identifies the activities that are not subject to the Montana Air Quality Permit program.

4. ARM 17.8.745 Montana Air Quality Permits—Exclusion for De Minimis Changes. This rule identifies the de minimis changes at permitted facilities that do not require a permit under the Montana Air Quality Permit Program.

5. ARM 17.8.748 New or Modified Emitting Units--Permit Application Requirements. (1) This rule requires that a permit application be submitted prior to installation, modification, or use of a source. The current permit action is an administrative amendment conducted in accordance with ARM 17.8.745 and does not require submittal of a permit application. (7) This rule requires that the applicant notify the public by means of legal publication in a newspaper of general circulation in the area affected by the application for a permit. The current permit action is an administrative amendment conducted in accordance with ARM 17.8.745 and does not require public notice.

6. ARM 17.8.749 Conditions for Issuance or Denial of Permit. This rule requires that the permits issued by the Department must authorize the construction and operation of the facility or emitting unit subject to the conditions in the permit and the requirements of this subchapter. This rule also requires that the permit must contain any conditions necessary to assure compliance with the Federal Clean Air Act (FCAA), the Clean Air Act of Montana, and rules adopted under those acts.

7. ARM 17.8.752 Emission Control Requirements. This rule requires a source to install the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The current permit action is an administrative modification conducted in accordance with ARM 17.8.745 and does not require a BACT analysis.

8. ARM 17.8.755 Inspection of Permit. This rule requires that air quality permits shall be made available for inspection by the Department at the location of the source.

9. ARM 17.8.756 Compliance with Other Requirements. This rule states that nothing in the permit shall be construed as relieving Luzenac of the responsibility for complying with any applicable federal or Montana statute, rule, or standard, except as specifically provided in ARM 17.8.740, *et seq*.

10. ARM 17.8.759 Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those permit applications that do not require the preparation of an environmental impact statement.

11. ARM 17.8.760 Additional Review of Permit Applications. This rule describes the Department's responsibilities for processing permit applications and making permit decisions on those applications that require an environmental impact statement.

12. ARM 17.8.762 Duration of Permit. An air quality permit shall be valid until revoked or modified, as provided in this subchapter, except that a permit issued prior to construction of a new or altered source may contain a condition providing that the permit will expire unless construction is commenced within the time specified in the permit, which in no event may be less than 1 year after the permit is issued.

13. ARM 17.8.763 Revocation of Permit. An air quality permit may be revoked upon written request of the permittee, or for violations of any requirement of the Clean Air Act of Montana, rules adopted under the Clean Air Act of Montana, the FCAA, rules adopted under the FCAA, or any applicable requirement contained in the Montana State Implementation Plan (SIP).

14. ARM 17.8.764 Administrative Amendment to Permit. An air quality permit may be amended for changes in any applicable rules and standards adopted by the Board of Environmental Review (Board) or changed conditions of operation at a source or stack that do not result in an increase of emissions as a result of those changed conditions. The owner or operator of a facility may not increase the facility's emissions beyond permit limits unless the increase meets the criteria in ARM 17.8.745 for a de minimis change not requiring a permit, or unless the owner or operator applies for and receives another permit in accordance with ARM 17.8.748, ARM 17.8.749, ARM 17.8.752, ARM 17.8.755, and ARM 17.8.756, and with all applicable requirements in ARM Title 17, Chapter 8, Subchapters 8, 9, and 10.

15. ARM 17.8.765 Transfer of Permit. This rule states that an air quality permit may be transferred from one person to another if written notice of Intent to Transfer, including the names of the transferor and the transferee, is sent to the Department.

F. ARM 17.8, Subchapter 8, Prevention of Significant Deterioration of Air Quality, including, but not limited to:

1. ARM 17.8.801 Definitions. This rule is a list of applicable definitions used in this subchapter.

2. ARM 17.8.818 Review of Major Stationary Sources and Major Modifications--Source Applicability and Exemptions. The requirements contained in ARM 17.8.819 through ARM 17.8.827 shall apply to any major stationary source and any major modification with respect to each pollutant subject to regulation under the FCAA that it would emit, except as this subchapter would otherwise allow.

   This facility is not a major stationary source because it is not a listed source and does not have the potential to emit 250 tons per year or more of any air pollutant.

G. ARM 17.8, Subchapter 12 – Operating Permit Program Applicability, including, but not limited to:

1. ARM 17.8.1201 Definitions. (23) Major Source under Section 7412 of the FCAA is defined as any source having:

   a. PTE > 100 tons/year of any pollutant;

   b. PTE > 10 tons/year of any one Hazardous Air Pollutant (HAP), PTE > 25 tons/year of a combination of all HAPs, or lesser quantity as the Department may establish by rule; or

   c. PTE > 70 tons/year of PM_{10} in a serious PM_{10} nonattainment area.

2. ARM 17.8.1204 Air Quality Operating Permit Program. (1) Title V of the FCAA amendments of 1990 requires that all sources, as defined in ARM 17.8.1204(1), obtain a Title V Operating Permit. In reviewing and issuing Air Quality Permit #1996-14 for Luzenac, the following conclusions were made.

   a. The facility's PTE is less than 100 tons/year for any pollutant.

   b. The facility's PTE is less than 10 tons/year for and one HAP and less than 25 tons/year for all HAPs.

   c. This source is not located in a serious PM_{10} nonattainment area.

   d. This facility is subject to the NSPS requirements under 40 CFR 60, Subpart OOO and 40 CFR 60, Subpart UUU, as applicable.

   e. This facility is not subject to any current NESHAP standards.

   f. This source is not a Title IV affected source, nor a solid waste combustion unit.

   g. This source is not an EPA designated Title V source.

   Based on these facts, the Department determined that Luzenac is a minor source of emissions as defined under Title V. However, if minor sources subject to NSPS are required to obtain a Title V Operating Permit, Luzenac will be required to obtain a Title V Operating Permit.

III. Emission Inventory:

Source	**ID#**	****PM**	**PM_{10}**	**CO**	**SO2**	**NOx**	**VOC**
Crude Ore Feed System	DC#1A	6.37	6.37	0.00	0.00	0.00	0.00
Impactor and Conveyor	DC#2	3.82	3.82	0.00	0.00	0.00	0.00
Coarse Ore Bin #1	DC#3	0.38	0.38	0.00	0.00	0.00	0.00
Coarse Ore Bin #2	DC#4	0.38	0.38	0.00	0.00	0.00	0.00
Pelletizer Feed Bin	DC#5B	2.04	2.04	0.00	0.00	0.00	0.00
ACM Mill #1	DC#6	4.41	4.41	0.00	0.00	0.00	0.00
ACM Mill #2	DC#7	4.41	4.41	0.00	0.00	0.00	0.00
Fine Product Silo #3	DC#8	1.27	1.27	0.00	0.00	0.00	0.00
Fine Product Silo #4	DC#9	1.27	1.27	0.00	0.00	0.00	0.00
Pelletizer Dryer Dust Collector	DC#10	9.93	9.93	0.43	0.01	2.15	0.11
Storage Silo #1	DC#11A	0.45	0.45	0.00	0.00	0.00	0.00
Densifier Feed Bin	DC#14A	1.02	1.02	0.00	0.00	0.00	0.00

Durant Packer Bin	DC#15	0.96	0.96	0.00	0.00	0.00	0.00
Coarse Ore Bin #3	DC#16	0.38	0.38	0.00	0.00	0.00	0.00
ACM Mill #3	DC#17	4.41	4.41	0.00	0.00	0.00	0.00
Fine Product Silo #5	DC#18	0.38	0.38	0.00	0.00	0.00	0.00
Fine Product Silo #6	DC#19	0.57	0.57	0.00	0.00	0.00	0.00
Packaging Area General Ventilation: Durant Packer, Densifiers, Reclaim	DC#21	7.01	7.01	0.00	0.00	0.00	0.00
Vacuum System & ACM Mill Purge	DC#22A	0.61	0.61	0.00	0.00	0.00	0.00
Packaging Area Target Box	DC#23	0.38	0.38	0.00	0.00	0.00	0.00
Classifier Cyclone	DC#24	0.39	0.39	0.00	0.00	0.00	0.00
Classifier System (Proposed)	DC#24A	4.43	4.43	0.00	0.00	0.00	0.00
ACM Mill #4	DC#25	4.41	4.41	0.00	0.00	0.00	0.00
Coarse Ore Bin #4	DC#26	0.48	0.48	0.00	0.00	0.00	0.00
Vacuum System Pre-Sep (No Discharge	DC#27	0.00	0.00	0.00	0.00	0.00	0.00
Fine Product Silo #2	DC#30	0.64	0.64	0.00	0.00	0.00	0.00
Slurry Feed Bin	DC#31	1.28	1.28	0.00	0.00	0.00	0.00
*Ore Storage (In Building)	NA	11.88	4.32	0.00	0.00	0.00	0.00
*Ore Handling	NA	29.70	10.80	0.00	0.00	0.00	0.00
*Ore Storage (Outdoor)	NA	18.15	6.60	0.00	0.00	0.00	0.00
*Topsoil Stockpile	NA	0.17	0.06	0.00	0.00	0.00	0.00
*Haul Roads (Trucks)	NA	3.00	1.35	0.00	0.00	0.00	0.00
*Haul Roads (Loader)	NA	1.33	0.60	0.00	0.00	0.00	0.00
Diesel Exhaust	NA	0.08	0.08	0.71	0.14	1.70	0.16
*Portable Rail-Car Ore Conveyor	NA	4.60	4.60	0.00	0.00	0.00	0.00
TOTAL EMISSIONS		**131.00**	**90.49**	**1.14**	**0.15**	**3.85**	**0.27**
TITLE V APPLICABLE EMISSIONS		**62.08**	**62.08**	**0.52**	**0.03**	**2.37**	**0.13**
* Fugitive emissions not applicable to Title V potential to emit. ** PM not regulated under Title V Operating Permit Program							

Crude Ore Feed System: DC#1A

Air Flow: 10,000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(10000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/ (460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)* (0.02 gr/dscf) = 1.45 lb/hr PM Emissions

1.45 lb/hr * 8760hr/yr * 0.0005 ton/lb = 6.87 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(10000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/ (460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)* (0.02 gr/dscf) = 1.45 lb/hr PM_{10}

1.45 lb/hr * 8760hr/yr * 0.0005 ton/lb = 6.87 ton/year

Impactor & Conveyor: DC #2

Air Flow: 6000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(6000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/ (460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)* (0.02 gr/dscf) = 0.873 lb/hr PM Emissions

0.873 lb/hr * 8760hr/yr * 0.0005 ton/lb = 3.82 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(6000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.873 lb/hr PM_{10}

0.873 lb/hr * 8760hr/yr * 0.0005 ton/lb = 3.82 ton/year

Coarse Ore Bin #1: DC #3

Air Flow: 600 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.087 lb/hr PM Emissions

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.087 lb/hr PM_{10}

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

Coarse Ore Bin #2: DC #4

Air Flow: 600 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.087 lb/hr PM Emissions

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.087 lb/hr PM_{10}

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

Pelletizer Feed Bin: DC#5B (Permit #1996-13)

Air Flow: 3200 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(3200 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.465 lb/hr PM Emissions

0.465 lb/hr * 8760hr/yr * 0.0005 ton/lb = 2.04 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(3200 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.465 lbs/hr PM_{10}

0.465 lb/hr * 8760hr/yr * 0.0005 ton/lb = 2.04 ton/year

ACM Mill #1: DC #6

Air Flow: 7696 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(7696 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+130 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 1.005 lb/hr PM Emissions

1.005 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(7696 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+130 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 1.005 lb/hr PM_{10}

1.005 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

ACM Mill #2: DC #7

Air Flow: 7700 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(7700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+130 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 1.005 lb/hr PM Emissions

1.005 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(7700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+130 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 1.005 lb/hr PM_{10}

1.005 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

Finished Product Silo #3: DC #8

Air Flow: 900 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(2000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.291 lb/hr PM

0.291 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.27 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(2000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.291 lb/hr PM_{10}

0.291 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.27 ton/year

Finished Product Silo #4: DC #9

Air Flow: 2000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(2000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.291 lb/hr PM Emissions

0.291 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.27 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(2000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 0.291 lb/hr PM_{10}

0.291 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.27 ton/year

Pellet Dryer and Pelletizer: DC #10

Air Flow: 17200 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {permit limit}

(17200 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+120 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 2.27 lb/hr PM Emissions

2.27 lb/hr * 8760hr/yr * 0.0005 ton/lb = 9.93 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(17200 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/(460+120 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*(0.02 gr/dscf) = 2.27 lb/hr PM_{10}

2.27 lb/hr * 8760hr/yr * 0.0005 ton/lb = 9.93 ton/year

Natural Gas-Fuel

Production Rate: 43 Million Cubic Feet Burned {Estimated 1993)

Carbon Monoxide 20.00 lb/MMCF {AFSEF SCC 39000689}
Calculation: 43 Million Cubic Feet Burned * 20.00 lb/MMCF* 1 ton/2000 lb = 0.43 ton/year

SO2 0.60 lb/MMCF {AFSEF SCC 39000689}
Calculation: 43 Million Cubic Feet Burned * 0.60 lb/MMCF* 1 ton/2000 lb = 0.01 ton/year

NOx 100.00 lb/MMCF {AFSEF SCC 39000689}
Calculation: 43 Million Cubic Feet Burned * 100.00 lb/MMCF* 1 ton/2000 lb = 2.15 ton/year

VOC 5.30 lb/MMCF {AFSEF SCC 39000689}
Calculation: 43 Million Cubic Feet Burned * 5.30 lb/MMCF* 1 ton/2000 lb = 0.11 ton/year

Storage Silo #1: DC#11A

Air Flow: 700 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.10 lb/hr PM

0.10 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.45 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.10 lb/hr PM_{10}

0.10 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.45 ton/year

Densifier Feed Bin: DC #14A

Air Flow: 1600 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(1600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.23 lb/hr PM Emissions

0.23 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.02 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(4050 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.23 lb/hr PM_{10}

0.23 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.02 ton/year

Durant Feed Bin: DC #15

Air Flow: 1500 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(1500 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.22 lb/hr PM Emissions

0.22 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.96 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(1500 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.22 lb/hr PM_{10}

0.218 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.96 ton/year

Coarse Ore Bin #3: DC #16

Air Flow: 600 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.087 lb/hr PM Emissions

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.087 lb/hr PM_{10}

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

ACM Mill #3: DC #17

Air Flow: 7700 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(7700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.005 lb/hr PM Emissions

1.005 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(7700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.005 lb/hr PM_{10}

1.005 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

Finished Product Silo #5: DC #18

Air Flow: 600 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.087 lb/hr PM Emissions

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.087 lb/hr PM_{10}

0.087 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

Finished Product Silo #6: DC #19

Air Flow: 900 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(900 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.131 lb/hr PM Emissions

0.131 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.57 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(900 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.131 lb/hr PM_{10}

0.131 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.57 ton/year

Packaging Area General Ventilation: DC#21
Durant Packer, Densifiers, Reclaim

Air Flow: 9000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(9000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.60 lb/hr PM Emissions

1.60 lb/hr * 8760hr/yr * 0.0005 ton/lb = 7.01 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(9000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.60 lb/hr PM_{10}

1.60 lb/hr * 8760hr/yr * 0.0005 ton/lb = 7.01 ton/year

Vacuum System: DC #22A

Air Flow: 900 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(900 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.14 lb/hr PM Emissions

0.14 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.61 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(900 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.131 lb/hr PM_{10}

0.14 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.61 ton/year

Durant Packaging Target Vent: DC #23

Air Flow: 600 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.09 lb/hr PM Emissions

0.09 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(600 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.09 lb/hr PM_{10}

0.09 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

JS-30 & Classifier Cyclone: DC #24

Air Flow: 700 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}
(700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.09 lb/hr PM Emissions

0.09 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.09 lb/hr PM_{10}

0.09 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.38 ton/year

Classifier System: DC#24A

Air Flow: 8000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}
(8000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.01lb/hr PM Emissions

1.01 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.43 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(8000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.01 lb/hr PM_{10}

1.01 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.43 ton/year

ACM Mill #4: DC#25

Air Flow: 7700 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(7700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.01 lb/hr PM Emissions

1.01 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(7700 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 1.01 lb/hr PM_{10}

1.01 lb/hr * 8760hr/yr * 0.0005 ton/lb = 4.41 ton/year

Coarse Ore Bin #4: DC#26

Air Flow: 750 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(750 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.11 lb/hr PM Emissions

0.11 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.48 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf
(750 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.11 lb/hr PM_{10}

0.11 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.48 ton/year

Finished Product Silo #2: DC#30

Air Flow: 1000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(1000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.15 lb/hr PM

0.15 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.64 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(1000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.15 lb/hr PM_{10}

0.15 lb/hr * 8760hr/yr * 0.0005 ton/lb = 0.64 ton/year

Slurry Feed Bin: DC#31

Air Flow: 2000 acfm

PM Emissions

PM Grain Loading: 0.02 gr/dscf {NSPS}

(2000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.29 lb/hr PM

0.29 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.28 ton/year

PM_{10} Emissions

PM_{10} Grain Loading: 0.02 gr/dscf

(1000 acfm)*(26.0 inches Hg/29.92 inches Hg)*((460+68 degrees F)/
(460+70 degrees f))*(1-(2% H2O/100%))*(60 minutes/hour)*(1lb/7000gr)*
(0.02 gr/dscf) = 0.29 lb/hr PM_{10}

0.29 lb/hr * 8760hr/yr * 0.0005 ton/lb = 1.28 ton/year

Ore Storage (In Building)

Production Rate: 144,000 Tons {Company Information: 34,000 ton increase from Permit #1996-13)
Control Equipment: 50% {Partial Enclosure}

PM Emission Factor: 0.33 lb/ton {AFSEF SCC 30502007}
Calculation: 144,000 Tons * 0.33 lb/ton* (1- 0.50)* 1 ton/2000 lb = 11.88 ton/year

PM_{10} Emission Factor: 0.12 lb/ton {AFSEF SCC 30502007}
Calculation: 144,000 Tons * 0.12 lb/ton* (1- 0.50)* 1 ton/2000 lb = 4.32 ton/year

Ore Handling

Production Rate: 180,000 Tons {Company Information: 34,000 ton increase from Permit #1996-13)
Control Equipment: 0%

PM Emission Factor: 0.33 lb/ton {AFSEF SCC 30502007}
Calculation: 180,000 Tons * 0.33 lb/ton* (1- 0.00)* 1 ton/2000 lb = 29.70 ton/year

PM_{10} Emission Factor: 0.12 lb/ton {AFSEF SCC 30502007}
Calculation: 180,000 Tons * 0.12 lb/ton* (1- 0.00)* 1 ton/2000 lb = 10.80 ton/year

Ore Storage (Outdoor)

Production Rate: 110,000 Tons {Estimate from 1993)

Control Equipment: 0%

PM Emission Factor: 0.33 lb/ton {AFSEF SCC 30502007}
Calculation: 110000 Tons * 0.33 lb/ton* (1- 0.00)* 0.0005 ton/lb = 18.15 ton/year

PM_{10} Emission Factor: 0.12 lb/ton {AFSEF SCC 30502007}
Calculation: 110000 Tons * 0.12 lb/ton* (1- 0.00)* 0.0005 ton/lb = 6.60 ton/year

Topsoil Stockpile

Production Rate: 1000 Tons {Estimate from AQD}

Control Equipment: 0%

PM Emission Factor: 0.33 lb/ton {AFSEF SCC 30502007}
Calculation: 1000 Tons * 0.33 lb/ton* (1- 0.00)* 0.0005 ton/lb = 0.17 ton/year

PM_{10} Emission Factor: 0.12 lb/ton {AFSEF SCC 30502007}
Calculation: 1000 Tons * 0.12 lb/ton* (1- 0.00)* 0.0005 ton/lb = 0.06 ton/year

Haul Roads-Trucks

Production Rate: 4007 VMT/yr {Company Information: Approximate 23.3% increase from Permit #1996-13)
Control Equipment: 85% {Water/Chemical Dust Suppression/Paving}

PM Emission Factor: 10.00 lb/VMT {AP-42 -- Cal. 1993}
Calculation: 4007 VMT/yr * 10.00 lb/VMT* (1- 0.85)* 0.0005 ton/lb = 3.00 ton/year

PM_{10} Emission Factor: 4.50 lb/VMT {AP-42 -- Cal. 1993}
Calculation: 4007 VMT/yr * 4.50 lb/VMT* (1- 0.85)* 0.0005 ton/lb = 1.35 ton/year

Haul Roads-Loader

Production Rate: 2946 VMT/yr {Company Information: Approximate 23.3% increase from Permit #1996-13}
Control Equipment: 85% {Water/Chemical Dust Suppression/Paving}

PM Emission Factor: 6.00 lb/VMT {AP-42 -- Cal. 1993}
Calculation: 2946 VMT/yr * 6.00 lb/VMT* (1- 0.85)* 0.0005 ton/lb = 1.33 ton/year

PM_{10} Emission Factor: 2.70 lb/VMT {AP-42 -- Cal. 1993}
Calculation: 2946 VMT/yr * 2.70 lb/VMT* (1- 0.85) * 0.0005 ton/lb = 0.60 ton/year

Diesel Exhaust

Production Rate: 9240 Gallons {Estimate permit #1996-14)

Control Equipment: 0%

PM Emission Factor: 17.70 lb/1000 gallons {AP-42 Volume II II-7-5}
Calculation: 9240 Gallons * 17.70 lb/1000 gallons* (1- 0.00)* 0.0005 ton/lb = 0.08 ton/year

PM_{10} Emission Factor: 17.70 lb/1000 gallons {AP-42 Volume II II-7-5}
Calculation: 9240 Gallons * 17.70 lb/1000 gallons* (1- 0.00)* 0.0005 ton/lb = 0.08 ton/year

CO 153.51 lb/1000 gallons {AP-42 Volume II II-7-5}
Calculation: 9240 Gallons * 153.51 lb/1000 gallons* 0.0005 ton/lb = 0.71 ton/year

SO2 31.10 lb/1000 gallons {AP-42 Volume II II-7-5}
Calculation: 9240 Gallons * 31.10 lb/1000 gallons* 0.0005 ton/lb = 0.14 ton/year

NOx 368.01 lb/1000 gallons {AP-42 Volume II II-7-5}
Calculation: 9240 Gallons * 368.01 lb/1000 gallons* 0.0005 ton/lb = 1.70 ton/year

VOC 33.70 lb/1000 gallons {AP-42 Volume II II-7-5}
Calculation: 9240 Gallons * 33.70 lb/1000 gallons* 0.0005 ton/lb = 0.16 ton/year

Portable Feeder/Conveyor

Emission Factor:	0.01 lb/ton of material processed (AP-42 Table 11.42-2, SCC3-03-024-08)
Hours of Operation:	8760 hr/yr
Maximum Production:	35 ton/hr
Transfer Points:	3 Transfers

Calculations: 35 ton/hr * 8760 hr/yr = 306,600 ton/yr

PM Emissions
306,600 ton/yr * 0.01 lb/ton * 0.0005 ton/lb * 3 Transfers = 4.6 ton/yr

PM_{10} Emissions
306,600 ton/yr * 0.01 lb/ton * 0.0005 ton/lb * 3 Transfers = 4.6 ton/yr

IV. BACT Determination

A BACT determination is required for each new or modified source. Luzenac shall install on the new source(s) the maximum air pollution control capability that is technically practicable and economically feasible, except that BACT shall be utilized. The current permit action is an administrative amendment conducted in accordance with ARM 17.8.745 and does not require a BACT analysis.

V. Existing Air Quality

The air quality of this area is classified as either Better than National Standards or unclassifiable/ attainment of the National Ambient Air Quality Standards (NAAQS) for criteria pollutants.

VI. Ambient Air Impact Analysis

The current permit action reflects the addition of new equipment to the facility and will result in increased emissions from the source. However, because all equipment added under the current permit action has the potential to emit less than 15 tons per year and was added to the permit in accordance with ARM 17.8.745(1)(a), the Department believes that the current permit action will not lead to or cause an exceedance of any applicable ambient air quality standard.

VII. Taking or Damaging Implication Analysis

As required by 2-10-101 through 105, MCA, the Department conducted a private property taking and damaging assessment and determined there are no taking or damaging implications.

VIII. Environmental Assessment

The current permit action involves the addition of new equipment to the existing permitted source. However, the current permit action is considered an administrative amendment in accordance with the provisions of ARM 17.8.745 and does not require an environmental assessment.

Permit Analysis Prepared by: M. Eric Merchant, MPH
Date: September 15, 2003